

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for managing a defective ~~area~~ data block on of a recording medium, ~~the recording medium including a defect management area including defect management information, which indicates a position of a defective area,~~ the method comprising:

receiving a write command for ~~real-time data~~ recording, the write command comprising a logical block address to designate a recording position and, a transfer length information to identify an amount of data to be recorded and write type information for indicating whether or not the real time recording is required, wherein the write command comprises 12 bytes of information including the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte;

determining whether to replace a found defective data block has been listed in the defect management information prior to recording data to a spare area of the recording medium based on the write type information; and

skipping replacing the defective data block and recording data in a next available block to the spare area of the recording medium if the found defective block has been listed in the defect management information the write type information indicates that the real time recording is not required, while not replacing the defective data block to the spare area of the recording medium if the write type information indicates that the real time recording is required, as a result of the determination;

identifying a number of blocks skipped during the real time recording; and
outputting an information associated with the number of blocks skipped for at least a next recording or reproducing operation.

2. (Cancelled)

3. (Currently Amended) The method of claim 1, further comprising:

identifying a number of defective data blocks found during the real time recording, in order for use in at least a next recording operation; and

updating a remaining recording capacity of the recording medium based on the ~~outputted information~~ number of defective data blocks, after recording the data.

4. (Currently Amended) The method of claim 1, further comprising:

recording a defect list on the recording medium, the defect list including an indication information to indicate that the defective data block ~~has been listed in the defect management information and has not been~~ is not replaced.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) The method of claim 14, wherein the recording step records the defect management information ~~list is PDL (Primary Defect List) and/or SDL (Secondary Defect List)~~ in a defect management area specified in the recording medium.

8. (Currently Amended) A method for managing a defective ~~area~~ data block on of a recording medium, ~~the recording medium including a defect management information, which indicates a position of a defective area,~~ the method comprising:

receiving a write command for data recording~~reproducing~~, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and indicating a write type information to indicate that ~~recorded data is~~ real time data recording is required;

~~determining whether a found defective block has been listed in the defect management information and the defective block has not been replaced with an available block of spare area based on an information, the information indicating whether the defective block has been replaced with an available block of spare area~~ the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command; and

controlling the ~~reproduction~~ recording of the ~~real time~~ data such that an optical pickup ~~skips the defective block and reproduces the data in a next available block without~~ does not jumping to the a spare area to replace a defective data block to a spare area of the recording medium ~~if the found defective block has been listed in the defect management information and the defective block has not been replaced with an available block of spare area; and~~

recording a defect list on the recording medium, the defect list including an indication information to indicate that the defective data block is not replaced to the spare area, the indication information being different from the write type information and type of the recoded data but dependent on the write type information.

9. (Currently Amended) The method of claim 8, wherein ~~the defect management information is PDL (Primary Defect List) and/or SDL (Secondary Defect List)~~ the recording the defect list records the defect list in a defect management area specified in the recording medium.

10. (Currently Amended) A system for managing a defective ~~area~~ data block on of a recording medium, ~~the recording medium including a defect management information, which indicates a position of a defective area,~~ the system comprising:

a recording/reproducing device for recording to record or reproduce data on or from the recording medium, the recording/reproducing device receiving a write command for real time recording or reproducing, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and write type information to indicate that real time data recording is required, checking whether or not a found defective block has been listed in the defect management information prior to recording data, skipping performing the recording operation to not replace the defective data block and recording data in a next available block to a spare area of the recording medium during the real time recording if the found defective block has been listed in the defect management information, and recording a defect list on the recording medium, the defect list including an indication information to indicate that the defective data block has been listed in the defect management information has not been is not replaced, the indication information being different from the write type information and type of the recoded data but dependent on the write type information; and

a host device, operatively coupled to the recording/reproducing device through interface, ~~to control a recording/reproducing device, the host device transferring~~ for transmitting the write command for real time data recording or reproducing to the recording/reproducing device, and controlling the recording/reproducing device to record or reproduce the data according to the write command;

wherein the recording/reproducing device determines the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command~~outputs an information for indicating a number of blocks skipped during a real time recording or reproducing to the host device, and the host device receives the information from the recording/reproducing device and outputs a next write command based on the received information.~~

11. (Currently Amended) The system of claim 10, wherein the recording/reproducing device sends a report including information to specify a number of defective data blocks found during the real time recording to the host device, and the host device detects-recognizes an amount of the recorded data recorded~~based on the information and updates the remaining capacity of the recording medium.~~

12. (Currently Amended) The system of claim 10, wherein the write command comprises 12 bytes of information including the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte, and wherein the recording/reproducing device recognizes the specified write command to perform the recording operation~~further includes a logical block address to designate a recording/reproducing position and a transfer length information to identify an amount of data to be recorded or reproduced.~~

13. (Currently Amended) The system of claim 10, wherein the write command~~further includes a recording or reproducing speed~~ comprises 12 bytes of information, the write type

information being present on 10th byte number, starting from byte 0 in the byte number, and the type information comprising 1 bit in the 10th byte number, and

wherein the recording/reproducing device recognizes the specified write command to perform the recording operation.

14. (Currently Amended) The method of claim 1, further comprising:

~~setting a speed flag according to a write speed of the data to be written~~

determining the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command.

15. (Currently Amended) The method of claim 14~~1~~, ~~wherein a linear replacement is executed when transfer speed is lower than the write speed by a predetermined amount, except when real time processing is required~~further comprising:

recognizing the specified write command to perform the recording of data.

16. (Currently Amended) The method of claim 8, ~~further comprising setting a speed flag according to a write speed of the data to be written~~ wherein the write command comprises 12 bytes of information including the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte, further comprising:

recognizing the specified write command to control the recording of the data.

17. (Currently Amended) The method of claim 16, wherein the write command further includes a write speed information to specify the recording speed of data to be recorded, further comprising:

performing a linear replacement to the defective data block ~~is executed when data transfer speed is lower than the write-recording speed by a predetermined amount, except when~~ and real time processing is not required.

18. (Currently Amended) The system of claim 10, wherein the host device transmits the write command including write type information to indicate that the real time recording is not required, alternatively, and the recording/reproducing device sets a speed flag according to the write speed of the data to be written performs the recording operation to replace the defective data block to the spare area of the recording medium during the non real time recording, and records a defect list on the recording medium, the defect list including an indication information to indicate that the defective data block is replaced.

19. (Currently Amended) The system of claim ~~18~~10, wherein the write command further includes a write speed information to specify the recording speed of data to be recorded, and wherein the recoding/reproducing device performs a linear replacement ~~is executed when data transfer speed is lower than the write speed by a predetermined amount, except when~~ and real time processing is not required.

20. (Currently Amended) A method for managing a defective area-data block on of a recording medium, ~~the recording medium includes defect management area including a defect list, which includes a position of defective area,~~ the method comprising:

receiving a write command for real time recording ~~or reproducing~~, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and write type information to indicate that real time data recording is required:

performing a recording operation of the data in such a manner that a defective data block is not replacing-replaced a found defective area with to a spare area of the recording medium, if the defective area is found during the real time recording or reproducing; and

storing an identification information to indicate that the defective ~~area-data block~~ is not replaced with a spare area, the identification information being different from the write type information and type of the recorded data but dependent on the write type information; and

~~identifying a number of defective areas not replaced during the real time recording or reproducing, in order for use in a next recording or reproducing.~~

21. (Currently Amended) The method of claim 20, wherein the performing step of not replacing includes a step of skipping a ~~found defective area-data block~~ and recording ~~or reproducing~~ data in a next available ~~area~~block.

22. (Cancelled)

23. (Cancelled)

24. (New) The method of claim 20, further comprising:

determining the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command, before the recording operation.

25. (New) The method of claim 20, further comprising:

identifying a number of defective data blocks found during the real time recording, in order for use in a next recording.

26. (New) The method of claim 20, wherein the write command comprises 12 bytes, the logical block address of 4 bytes, the transfer length information of 4 bytes and the type information of 1 bit among 1 byte, among the 12 bytes, further comprising:

recognizing the specified write command to perform the recording operation.

27. (New) The method of claim 20, wherein the write command comprises 12 bytes, the type information being present on 10th byte number, further comprising:

recognizing the specified write command to perform the recording operation.

28. (New) The method of claim 27, wherein the type information comprises 1 bit in 10th byte number.

29. (New) An apparatus for managing a defective data block, comprising:

an optical pickup adapted to record data on the recording medium; and

a controller adapted to receive a write command for recording data, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and a write type information to indicate that real time data recording is required, to determine the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command, to control the optical pickup to record the data such that the optical pickup does not jump to a spare area to replace a defective data block to a spare area of the recording medium, and to create a defect list on the recording medium, the defect list including an indication information to indicate that the defective data block is not replaced to the spare area, the indication information being different from the write type information and type of the recorded data but dependent on the write type information.

30. (New) The apparatus of claim 29, wherein the controller controls the optical pickup to record the defect list in a defect management area specified in the recording medium.

31. (New) The apparatus of claim 29, wherein the write command comprises 12 bytes of information including the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte, and

wherein the controller recognizes the specified write command to control the optical pickup.

32. (New) The apparatus of claim 31, wherein the write command further includes a write speed information to specify the recording speed of data to be recorded, and

wherein the controller controls the optical pickup to perform a linear replacement to the defective data block when data transfer speed is lower than the recording speed and real time processing is not required.

33. (New) An apparatus for managing a defective data block, comprising:

a recording/reproducing unit adapted to record data on the recording medium; and

a controller adapted to receive a write command to record data, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and write type information to indicate whether real time data recording is required, to perform a recording operation of the data in such a manner that a defective data block is not replaced to a spare area of the recording medium if the write type information indicates that the real time recording is required while the defective block is replaced to the spare area of the recording medium if the write type information indicates that the real time recording is not required, and to create an indication information to indicate whether or not the defective data block is replaced with a spare area, the indication information being different from the write type information and type of the recoded data but dependent on the write type information.

34. (New) The apparatus of claim 33, wherein the controller controls the recording/reproducing unit to skip a defective data block and record data in a next available block.

35. (New) The apparatus of claim 33, wherein the controller determines the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command, before the recording operation, thereby control the recording/reproducing unit.

36. (New) The apparatus of claim 33, wherein the controller identifies a number of defective data blocks found during the real time recording, in order for use in a next recording.

37. (New) The apparatus of claim 33, wherein the write command comprises 12 bytes including the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte, and

wherein the controller recognizes the specified write command to perform the recording operation.

38. (New) The apparatus of claim 33, wherein the write command comprises 12 bytes including the write type information being present on 10th byte number, and

wherein the controller recognizes the specified write command to perform the recording operation.

39. (New) The apparatus of claim 38, wherein the write type information comprises 1 bit in 10th byte number.

40. (New) A system for managing a defective data block, comprising:

a recording/reproducing device for recording data to a recording medium, the recording/reproducing device for receiving a write command, the write command including a logical block address to designate a recording position in the recording medium, a transfer length information to identify an amount of main data to be recorded and a write type information to identify whether the real time recording is required, and for determining whether to replace a defective data block to a spare area of the recording medium based on at least the write type information; and

a host device, operatively coupled to the recording/reproducing device through an interface, to control the recording of data, the host device transmitting the write command and the data to be written to the recording/reproducing device through the interface,

the write command comprising 12 bytes of information, which includes the logical block address of 4 bytes, the transfer length information of 4 bytes and the type information of 1 bit among 1 byte, and

wherein the recording/reproducing device recognizes the specified write command to determine at least the write type, and performs the recording operation such that the defective data block is not replaced with the spare area of the recording medium if the write command identifies that the real time recording is required, while the defective data block is replaced with the spare area of the recording medium if the write command identifies that the real time recording is not required.

41. (New) The system of claim 40, wherein the recording/reproducing device records a defect entry including a location of the defective data block and an indication information for

specifying whether the defective data block is replaced with the spare area, in response to the recording operation, the indication information being different from the write type information of the write command and type of the recoded data but dependent on the write type information, and

wherein the indication information indicates that the defective data block is not replaced to the spare area, if the recording/reproducing device receives the write command including the write type information to identify that the real time recording is required.

42. (New) The system of claim 41, wherein the indication information indicates that the defective data block is replaced to the spare area, if the recording/reproducing device receives the write command including the write type information to identify that the real time recording is not required.

43. (New) The system of claim 40, wherein the recording/reproducing device comprises:
an optical pickup unit for recording the data on the recording medium,
a data processor for processing the data and transferring the processed data to the optical pickup unit, and
a control unit for controlling the recording operation of data.

44. (New) The system of claim 40, wherein the host device transmits the write command comprising 12 bytes of information, which includes the type information being present on 10th

byte number, and the recoding/reproducing device recognizes the specified write command to perform the recording operation.

45. (New) The system of claim 44, wherein the write type information comprises 1 bit in 10th byte number.

46. (New) An apparatus for managing a defective data block, comprising:
a recording/reproducing unit for recording data to a recording medium; and
a control unit, operatively coupled to the recording/reproducing unit, to control the recording of data, the control unit for receiving a write command, the write command including a logical block address to designate a recording position in the recording medium, a transfer length information to identify an amount of main data to be recorded and a write type information to identify whether the real time recording is required, and for determining whether to replace a defective data block to a spare area of the recording medium based on the write command and for controlling the recording/reproducing unit according to the determination, the write command comprising 12 bytes of information, which includes the logical block address of 4 bytes, the transfer length information of 4 bytes and the type information of 1 bit among 1 byte, and

wherein the control unit recognizes the specified write command to determine at least the write type, and controls the recording/reproducing unit such that the defective data block is not replaced with the spare area of the recording medium if the write command identifies that the real time recording is required, while the defective data block is replaced with the spare area of the recording medium if the write command identifies that the real time recording is not required.

47. (New) The apparatus of claim 46, wherein the control unit controls the recording/reproducing unit to record a defect entry including a location of the defective data block and an indication information for specifying whether the defective data block is replaced with the spare area, in response to the recording operation, the indication information being different from the write type information of the write command and type of the recoded data but dependent on the write type information, and

wherein the indication information indicates that the defective data block is not replaced to the spare area, if the control unit receives the write command including the write type information to identify that the real time recording is required.

48. (New) The apparatus of claim 47, wherein the indication information indicates that the defective data block is replaced to the spare area, if the control unit receives the write command including the write type information to identify that the real time recording is not required.

49. (New) The apparatus of claim 46, wherein the control unit receives the write command comprising 12 bytes of information, which includes the type information being present on 10th byte number, and recognizes the specified write command to control the recording/reproducing unit according to the write command.

50. (New) The apparatus of claim 49, wherein the write type information comprises 1 bit in 10th byte number.